FEMA's Latest Multi-Hazard Software

HAZUS® MH

EARTHQUAKE • WIND • FLOOD

What Could Happen?

How can we plan to minimize damage and loss of life in order to prevent natural hazard events from becoming natural disasters? Which buildings, roads, and bridges may be damaged and how great would the damage be? Which roads may be closed? Which areas may be affected if utilities failed? Which businesses will shut down?

How Can HAZUS®MH Help?

An important part of comprehensive community planning is understanding risks that may affect the physical, social, and economic components of a community. Communities who understand their vulnerability to natural hazards can make development decisions in light of those hazards and the risks associated with them.

FEMA introduces its latest risk assessment and loss estimation software package, **HAZUS$_{MH}$** (Multi-Hazard – earthquake, hurricane wind, and flood), that can help answer complex questions about the consequences of a hazard event.

What Are the Impacts of a Hazard Event?

HAZUS$_{MH}$ helps states, communities, and businesses, prepare for, mitigate the effects of, respond to, and recover from a hazard event. One of the great strengths of **HAZUS$_{MH}$** is that it provides estimates of hazard-related damage before a disaster occurs and takes into account various impacts of a hazard event such as:

- Physical damage: damage to residential and commercial buildings, schools, critical facilities, and infrastructure
- Economic loss: lost jobs, business interruptions, repair and reconstruction costs
- Social impacts: impacts to people, including requirements for shelters and medical aid

HAZUS$_{MH}$ and Its Unique Features

HAZUS$_{MH}$ can quantify the risk for a study area of any size: region, state, community, neighborhood, or an individual site. **HAZUS$_{MH}$** uses GIS technology to combine hazard layers with national databases and applies a standardized loss estimation and risk assessment methodology. The GIS-based environment allows users to create graphics to help communities visualize and understand their hazard risks and solutions. The nationwide databases built into **HAZUS$_{MH}$** include datasets on demographics, building stock, essential facilities, transportation, utilities, and high-potential-loss facilities.

HAZUS$_{MH}$ can estimate losses from earthquakes, hurricane winds, and floods. **HAZUS$_{MH}$** uses:

- Ground motion and ground failure information to calculate losses for earthquakes
- Information on wind pressure, windborne missiles, and rain for hurricane winds
- Flood frequency, depth, discharge, and velocity for floods

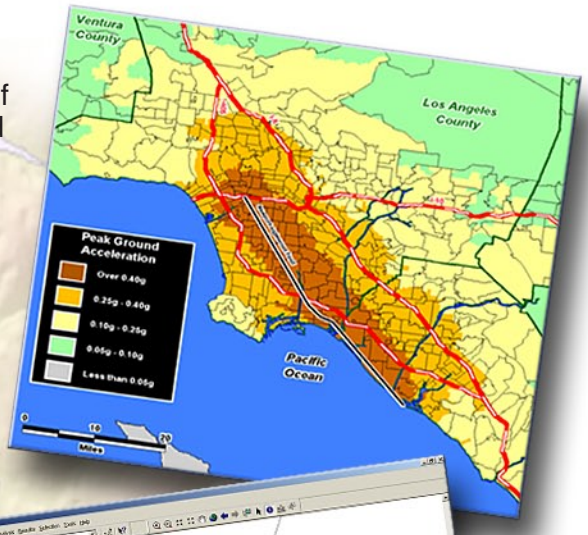
The New HAZUS$_{MH}$ Models

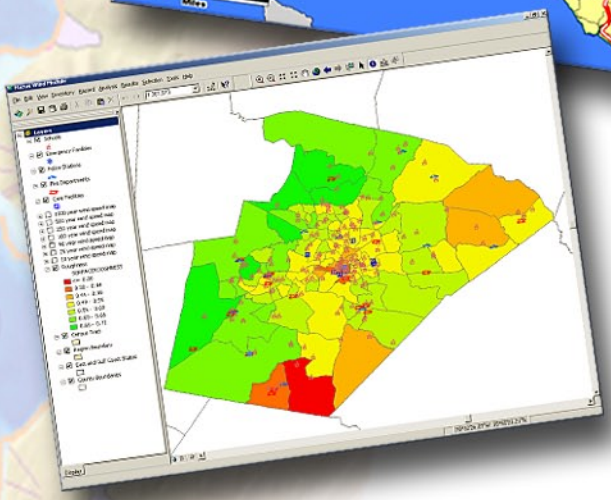
The updated **HAZUS$_{MH}$ Earthquake Model** provides estimates of damage and loss to buildings, essential facilities, transportation and utility lifelines, and population based on scenario or probabilistic earthquakes. In addition to estimating direct damage, the new model addresses debris generation, fire following a disaster, casualties, and shelter requirements.

The new **HAZUS$_{MH}$ Hurricane Wind** Model allows users to consider any possible hurricane winds, as well as historic hurricanes, to estimate potential damage and economic losses to residential, commercial, and industrial buildings in states along the Atlantic and Gulf coasts and Hawaii.

In the new **HAZUS$_{MH}$ Flood Model**, flood risk is determined by nationwide data sets through analyses of possible flooding based on hydrologic information. The Flood Model allows users to characterize flooding and then estimate the expected levels of damage to buildings and infrastructure.

HAZUS$_{MH}$ can access third-party technological hazards models that address **technological hazards models** that address hazardous materials releases and dam breaks.

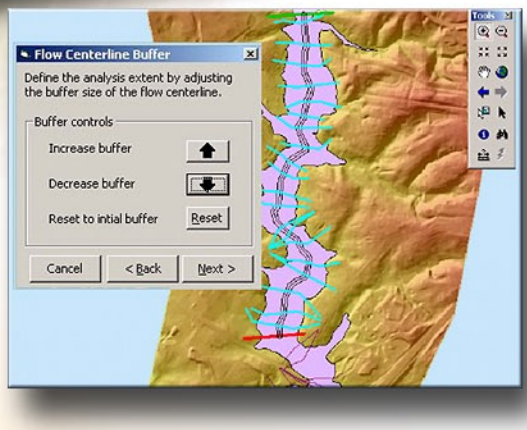




How Can HAZUS$_{MH}$ Help Build Safer, Stronger Communities?

HAZUS$_{MH}$ can help communities effectively:

- **ANTICIPATE** the scope of disaster-related damage.
- **IDENTIFY** areas at risk from hazards that may require special land-use or building codes
- **ASSESS** the vulnerability of housing and essential facilities
- **ESTIMATE** potential losses from specific natural disasters
- **PRIORITIZE** mitigation projects
- **EDUCATE** the community about its risk and how to reduce it
- **DEVELOP** damage prevention, preparedness, response, and recovery plans



HAZUS$_{MH}$
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For more information about **HAZUS$_{MH}$**, and training opportunities, visit the HAZUS page on the FEMA website at **www.fema.gov/plan/prevent/hazus**, or send an email to **FEMA-HAZUS@dhs.gov**.

HAZUS$_{MH}$ is available free of charge.

FEMA

05/2006